

WHAT IS CLAIMED IS:

1. A printed circuit device, comprising:

a substrate formed substantially of ferrite material, said substrate having top and bottom surfaces, first and second side surfaces between said top and bottom surfaces along a major dimension thereof, and first and second end surfaces between said top and bottom surfaces along a minor dimension thereof;

at least one circuit component mounted to a main surface of said substrate; and

a conductor formed on said substrate and extending over one of said main surfaces and side surfaces in a coil pattern.

2. The printed circuit device of claim 1, wherein said at least one circuit component lead is routed through a via formed in said substrate.

3. The printed circuit device of claim 2, wherein said at least one circuit component comprises a light-emitting diode (LED) and a lead for said LED.

4. The printed circuit device of claim 3, wherein said lead for said LED is a drive lead.

5. The printed circuit device of claim 2, wherein said at least one circuit component lead is routed through a plurality of vias formed in said substrate.

6. The printed circuit device of claim 5, wherein a plurality circuit component leads is routed through a plurality of vias formed in said substrate.

7. The printed circuit device of claim 1, wherein said coil is edge-joined around said substrate.

8. The printed circuit device of claim 1, wherein said coil is used for transfer of data signals to an external device.
9. The printed circuit device of claim 1, wherein said coil is used for inductive transfer of electric power from an external power supply.
10. The printed circuit device of claim 1, wherein said printed circuit device is a component of an implantable sensor device that performs quantitative analyte measurements within a body of a living organism.
11. The printed circuit device of claim 10, wherein said at least one circuit component comprises a light-emitting diode (LED) and wherein said printed circuit device further including at least one photodetector.
12. In an electronic device having an integrated circuit formed on a printed circuit device and an inductive coil for data and/or power transfer, the improvement comprising:
 - forming said printed circuit device substantially of ferrite material; and
 - using said printed circuit device as a ferrite core for said inductive coil.
13. A fluorescence sensor device, comprising:
 - a light source for introducing light into a fluorescent indicator that interacts with a medium;
 - a photodetector for detecting light emitted by said fluorescent indicator in response to the introduced light, and for outputting a signal proportional to the detected light, the response of the fluorescent indicator varying in accordance with the presence and quantity of an analyte in the medium;
 - a coil for receiving electrical power from an external power supply, and for communicating said signal to an external processing device; and

a substrate formed substantially of ferrite material, said light source and said photodetector being mounted to said substrate, and said coil being formed on a said substrate such that said ferrite material increases induction characteristics of said coil.

14. The fluorescence sensor device of claim 13, wherein said light source and said photodetector being mounted to a first section of said substrate, and said coil being formed on a second section of said substrate.

15. The fluorescence sensor device of claim 13, wherein said coil extends around opposing surfaces of said substrate.

16. The fluorescence sensor device of claim 13, wherein said light source comprises a component that is routed through a via formed in said substrate.

17. The fluorescence sensor device of claim 13, wherein said coil is edge-wrapped around said substrate.

18. The fluorescence sensor device of claim 13, wherein said coil is used for communication of data signals to an external device.

19. The fluorescence sensor device of claim 13, wherein said coil is used for inductive reception of electric power from an external power supply.

20. The fluorescence sensor device of claim 13, wherein said device comprises an implantable sensor device that performs quantitative analyte measurements within a body of a living organism.

21. The fluorescence sensor device of claim 13, wherein said device comprises an implantable sensor device that performs qualitative analyte measurements within a body of a living organism.
22. The fluorescence sensor device of claim 20, wherein said light source comprises a light-emitting diode (LED) and said substrate further including at least one photodetector.
23. The fluorescence sensor device of claim 13, further comprising a via formed in said substrate for routing of a conductor for a circuit component.
24. The printed circuit device of claim 1, further comprising a via formed in said substrate for routing of a conductor for a circuit component.
25. A fluorescence sensor device, comprising:
- a light source for introducing light into a fluorescent indicator that interacts with a medium;
 - a photodetector for detecting light emitted by said fluorescent indicator in response to the introduced light, and for outputting a signal proportional to the detected light, the response of the fluorescent indicator varying in accordance with the presence and quantity of an analyte in the medium; and
 - a substrate on which said light source and said photodetector are mounted; and
- wherein an optical filter is located directly over said photodetector.